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ABSTRACT

Using a review of the literature and national longitudinal data on 1,087 youth aged 11 to 17, this study investigated whether religious commitment reduces drug use among poor urban teenagers. Standard multivariate statistical analysis of data from the National Youth Survey (1997) showed that inner-city adolescents who were more religious were significantly less likely to take drugs than other young people living in the same neighborhoods. Highly religious youth living in urban neighborhoods were less likely to use illicit drugs than nonreligious youth living in suburban neighborhoods. This study indicates that the degree to which being religious decreased a youth's probability of using illicit drugs decreases the older a teenager becomes. Youth who had good family relations, did well in school, had nondrug-using friends, and possessed antidrug attitudes were even less likely to use illicit drugs when they were also religious. The effect of religious commitment among poor urban teenagers was statistically significant for all categories of illicit drugs, including hard drugs. Appendixes discuss study details, illustrate variable operationalization, present the analytic model, and contain data tables and figures. (Contains 3 tables, 2 figures, and 37 endnotes.) (SLD)

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A BETTER KIND OF HIGH:

HOW RELIGIOUS COMMITMENT REDUCES DRUG USE AMONG POOR URBAN TEENS

BYRON R. JOHNSON
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CRRUCS REPORT 2000-2

JOHN J. DIIULIO, JR., DIRECTOR, CRRUCS

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FOREWORD

John J. DiIulio, Jr.
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Congress has recently passed new laws making it possible for churches, synagogues, mosques, and other religious organizations to receive government social service delivery contracts and vouchers on the same basis as other non-governmental providers of such services. Vice President Al Gore has proclaimed that new partnerships between government and religious organizations are vital to achieving a wide range of social policy goals. Texas Governor George W. Bush has declared that, given adequate public and private support, local community-serving ministries can help to solve serious social problems. A number of major foundations, including the Ford Foundation and the Pew Charitable Trusts, have increased support for faith-based programs that work in poor urban neighborhoods. On June 1, 1998, *Newsweek* ran a cover story on a small inner-city youth outreach ministry in Boston. Since then hardly a month has gone by without some largely favorable major media story on religion in the public square. The Gallup Institute in Princeton, New Jersey has released data showing that 96 percent of Americans believe in God, and that more Americans than ever believe intensely. For example, over the last decade the fraction of Americans who say they "never doubt" the existence of God has increased from 66 to 79 percent. Also, Gallup has reported that wide majorities believe "religion can solve all or most of today's problems," and favor government support for faith-based organizations that combat social ills.

These faith-friendly trends in politics, philanthropy, journalism, and public opinion are welcome to some but worrisome to others.[1] Regardless, they are real. Social scientists cannot resolve deeply philosophical disagreements about the role of religion in American life, but they can and should supply objective answers to basic empirical questions about it. For example, how and to what extent do local urban religious congregations actually serve their neediest neighbors?

For CRRUCS Report 2000-1, Professor Ram A. Cnaan developed and analyzed a remarkably rich data set detailing the community-serving activities of Philadelphia congregations.[2] Among other fascinating findings, he discovered that 91 percent of the congregations had at least one community-serving program. Examples included food pantries (48%), prison ministries (21%), summer camps (40%), and substance abuse prevention (17%). The congregations supplied goods and services worth a conservatively estimated $200 million a year. "Unchurched" youth—poor neighborhood children and teenagers whose parents did not belong to any church and who did not attend church themselves—were the congregation-based programs' primary beneficiaries. Few of the programs proselytized, and none made a profession of religious faith or church membership a condition for receiving help.

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[1] For a sample of opinions, see E.J. Dionne, Jr. and John J. DiIulio, Jr., *What's God Got to Do with the American Experiment?* (Washington, D.C.: Brookings Institution Press, 2000).

[2] Ram A. Cnaan, *Keeping Faith in the City: How 401 Religious Congregations Serve Their Neediest Neighbors*, University of Pennsylvania, Center for Research on Religion and Urban Civil Society, CRRUCS 2000-1, March 20, 2000.

This last finding comforted some but concerned others. Among the concerned was an Evangelical Christian leader who, at a Washington, D.C. conference on faith and public policy sponsored by the Brookings Institution, challenged me to say whether poor but churched urban youth were less likely than comparable youth to resist the blandishments of illicit drugs. Clearly, he thought they were, but I could only respond that, while some studies hinted that certain faith-based drug programs (Teen Challenge, for example) were efficacious, there were as yet no definitive data on their performance, either in absolute terms or relative to secular programs. Besides, I added, most of the existing studies tested the effects on illicit drug use of participation in faith-based anti-drug programs, not whether going to church or being religious cut drug use among any particular population.

Today, however, I could give a less wishy-washy answer. In the present CRRUCS Report, Dr. Byron Johnson presents empirical evidence strongly suggesting that religious commitment, in and of itself, reduces drug use among poor urban teenagers. In a previous study published by the Manhattan Institute's Center for Civic Innovation, Johnson reported that among African-American youth living in poverty tracts in three big cities, those who attended church at least once a week were only half as likely to use illicit drugs as otherwise comparable youth who never attended church.[1] Now, based on a masterful review of the relevant research literatures and an original statistical analysis of national longitudinal data on 1,087 youth ages 11 to 17, he arrives at a number of new and important findings:

- Religious low-income urban teenagers are much less likely to take illicit drugs than otherwise comparable teenagers living in the same high-poverty neighborhoods.

- Highly religious youth living in poor urban neighborhoods are less likely to use illicit drugs than non-religious youth living in middle-class suburban neighborhoods.

- The degree to which being religious reduces a youth's probability of using illicit drugs increases the older a teenager becomes.

- Youth who have good family relations, do well in school, have non-drug-using friends, and possess anti-drug attitudes are even less likely to use illicit drugs when they are also religious.

- The effect of religious commitment in cutting illicit drug use among poor urban teenagers is statistically significant for all categories of illicit drugs including hard drugs.

As Johnson concludes, at least where poor urban teenagers are concerned, it would appear that "the effects of individual religious commitment on drug use are significant and real." But as he also notes, many questions remain unanswered. Future CRRUCS research, for example, will test whether merely living in a neighborhood with a high density of community-serving ministries has any impact on illicit drug use among poor urban teenagers and others. We also are planning to launch the first-ever systematic evaluation study of a major faith-based drug treatment program.

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[1] Byron Johnson et al., *Religion: The Forgotten Factor in Cutting Youth Crime and Saving At-Risk Urban Youth*, Center for Civic Innovation, Manhattan Institute, Jeremiah Project Report 98-2, December 1998.

For now, however, kudos to Dr. Johnson for his superb faith factor research. Penn is most fortunate to have wooed him away from Vanderbilt.

Thanks are due to the Manhattan Institute's Center for Civic Innovation (CCI) for stimulating the study and supporting its release. Without CCI Director Henry Olsen, a talented policy leader and thoughtful soul who honors the "think" in "think tank," this report would not have come together as it did.

Finally, thanks to the Buford Foundation for the generous and timely grant to CRRUCS that enabled Dr. Johnson to complete this study, and gave us what we needed to seed several pending research projects and to continue Professor Cnaan's census of local congregations. With a head for business, a heart for faith-based leadership networks, and a regard for high-impact social research, Bob Buford, long a blessing to his Dallas community and the nation, is among the early blessings enjoyed by CRRUCS.

John J. DiIulio, Jr.
July 30, 2000

A Better Kind of High: How Religious Commitment Reduces Drug Use Among Poor Urban Teens

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Government statistics confirm what parents already know: drug use among American teenagers is still unacceptably high.[1] Despite the national concern, social science research is still searching for a definitive explanation for what causes a teen to take illegal drugs. Many studies suggest that one major influence is the condition of the neighborhood in which an adolescent lives:[2] the worse the neighborhood is, the more likely it is that a teen living there will use drugs. However, no study has yet accurately measured this effect; more importantly, no study has yet shown how this baleful influence can be reduced.

This study fills these gaps. Using standard multivariate statistical analysis, we show that inner-city adolescents who are more religious are significantly less likely to take drugs than other youths living in the same run-down neighborhoods – 17 percent less likely to use marijuana and 6 percent less likely to use hard drugs. Indeed, religious commitment is such an important influence we find that highly religious youths living in bad neighborhoods are less likely to take drugs than non-religious youths living in good neighborhoods. Our data also show that the beneficial influence of religion increases the older a teenager gets. These data demonstrate that neither demography nor geography is destiny when it comes to today's teen drug epidemic.

Why Neighborhood Conditions Affect Teen Drug Use

In their now-famous *Atlantic Monthly* article "Fixing Broken Windows,"[3] Professors James Q. Wilson and George Kelling illustrated how one broken window left unrepaired would signal that "no one cares" in a neighborhood, thus leading to more broken windows and then other types of deviance, including serious crime. More formally stated, untended behavior (social disorder) and untended property (physical disorder) *observed* in a neighborhood lead to the breakdown of neighborhood controls because residents *perceive* that people who maintain community order – police, parents, neighborhood leaders — are unwilling or incapable of preserving that order. Residents living in these disorderly conditions fear criminal victimization, avoid interactions with other residents, and even move out of the neighborhood, thereby weakening the social basis for exercising control in these communities.[4] "For local delinquent youths and at-risk children, the persistent physical [and social] incivilities symbolize opportunities for delinquency" and drug use.[5]

Only a few researchers have examined the effects of neighborhood disorder on crime.[6] For example, one study concluded that perceived disorder has a more important influence on neighborhood crime (i.e., the robbery victimization rate) than poverty, instability, and neighborhood racial composition.[7] Another study demonstrated that perceived disorder is correlated with increases in three of the eight index crime categories included in the FBI's Uniform Crime Reports.[8] Similarly, a third study reports that robberies take place more frequently in distressed neighborhoods.[9]

One can surmise from this evidence that neighborhood disorder provides an environmental context in which a teen can easily start and continue to use illegal drugs. The "broken windows" effect presupposes that social institutions like family and school have little ability to enforce the conventional idea that it is wrong for youths to use illicit drugs.[10] Such perceptions tend to weaken the adolescent's bond to family, school, and neighborhood, while promoting favorable and tolerant attitudes toward drug use among adolescents — a key predictor of adolescent drug use.[11]

Once this starts to happen, drug usage starts to snowball because drug-using teens can safely form friendships and "hang out" in a group without fear of reprisal. Indeed a mounting body of empirical evidence suggests that having drug-using friends is the strongest predictor of adolescent drug use,[12] and that such friends are more likely to be from the same rather than a different neighborhood.[13] Thus, neighborhood disorder becomes an environmental risk factor for adolescent use of illicit drugs by increasing the acceptability as well as the availability of drugs in the neighborhood.

Despite these findings and the national recognition of our serious teenage drug problem, no study has tried to quantify how neighborhood disorder affects drug usage. Furthermore, researchers have failed to study individuals living in these neighborhoods to see if the effects observed in the aggregate are also observed in specific persons, an important undertaking if we want to figure out what we can do to reverse these trends.

Why Individual Religious Commitment Matters

Most published studies find that religious commitment significantly reduces adolescent deviance, especially drug use.[14] Why? Theoretically, religious adolescents are guided by behavioral sanctions derived from religion, which discourage deviance or drug use, while non-religious adolescents are not subject to such sanctions. A teenager's religious commitments also *indirectly* affect his or her drug use because religious adolescents are likely to have conventional friends as well as strong bonds to family and school, factors known to reduce adolescent deviance and drug use. Given the fact that strong bonds to family and hanging-out with non-drug-using friends are predictors of non-use of illegal drugs, it would seem logical that individual religious commitment has the potential to counteract at least some of the harmful influence of living in a disorderly neighborhood. Indeed, in a recently published study of African-American youth living in poverty tracts in three major urban cities, researchers found that those adolescents who attended church at least once per week were 46 percent less likely to use drugs than comparable youth who did not attend at all.[15]

Recent research, in fact, demonstrates that these effects may be even stronger for adolescents living in run-down neighborhoods than it is for other adolescents living in affluent communities.[16] Youth involvement in religious practices and related activities becomes a vehicle for fostering the development of and integration into strong friendships that provide social and emotional support *independent* of the prevailing neighborhood influences. When these friendships become embedded

in the neighborhood and are connected with stable institutions (e.g., friends living in the same neighborhood attend the same church), they not only constrain but also protect an adolescent from the effects of perceived neighborhood disorder.[17] Put differently, an adolescent's involvement and participation in a neighborhood-based religious community provides a network of support that is expected to reduce the harmful effects of neighborhood disorder on his or her behavior. In this way, then, religious networks can buffer or shield youths from the deleterious effects of living in bad neighborhoods, thus "insulating" these teens against illicit drug use in spite of living in disordered neighborhoods.[18]

Study Design

To address these issues it is first necessary to determine whether living in disorderly neighborhoods is linked to individual-level increases in the use of illicit drugs among teens. Second, the analysis examines a host of important variables known to be causally linked with increases as well as decreases in rates of crime, in order to determine if individual religious commitment reduces, independently, the deleterious effects of neighborhood disorder on illicit teen drug use. Third, we examine whether the effect of individual religious commitment on drug use declines as youths age, as many researchers have assumed.[19]

These hypotheses are tested in the present study[20] using data from the National Youth Survey[21] (NYS), a longitudinal survey (e.g. one that repeatedly collects data on a group of youths at different times — or "waves" — over a significant period of time) of a national probability sample of 1,725 persons aged 11 to 17 in early 1977 (see Appendix A: Study Details for a more complete description of the data). Data are analyzed from Waves 3 to 5, since these are the only waves of the NYS to include measures of individual religious commitment. In order to establish a baseline measure of neighborhood disorder, data are used from the parental survey in Wave 1. Since it is assumed that the level of order or disorder in a neighborhood did not change during this five year period (i.e., parent interview in Wave 1 and teen respondents in Waves 3-5), the analysis is confined to those adolescents whose place-of-residence did not move during these five years. Over the first five waves a total of 220 respondents changed residence, leaving 1,505 respondents eligible for the analysis.[22]

Key Study Variables

Illegal Drug Use

The NYS measures self-reported drug use during the year prior to an interview by asking respondents how often they used drugs with response options ranging from "never" (coded 1) to "two to three times a day" (coded 9). In this study the focus is on two types of illicit drug use: (1) use of marijuana and (2) use of "hard drugs," which refers to the average use of six illicit drugs (i.e., marijuana or hashish, hallucinogens, tranquilizers, amphetamines, barbiturates, heroine, and cocaine).

Neighborhood Disorder

The study measures perceived neighborhood disorder based on the parents' descriptions of their own neighborhoods.[23] The NYS asked them to report whether any of seven listed "problems that sometimes occur in neighborhoods" (e.g., vandalism, abandoned houses) was a big problem (coded 3), a problem (coded 2), or not a problem at all (coded 1) in their neighborhoods at Wave 1.

Based on these findings, we constructed an index of perceived neighborhood disorder by calculating the average of scores on the seven items (see Appendix B).

Individual Religious Commitment

While individual religious commitment is a multidimensional concept,[24] previous research indicates that behavioral measures like the frequency of church attendance tend to be more strongly related to deviance than measures of religious attitudes or beliefs.[25] The current study first focuses on respondents' frequency of attending religious services. On the other hand, to address concerns over whether a teen's self-reports of religious participation merely reflects parental expectations or coercion, it was necessary to construct a measure of individual religious commitment by multiplying the frequency of attending religious services by the importance of religion in the respondent's life.[26] Because both items are measured by a 5-point scale, ranging from "never" (coded 1) to "several times a week" (coded 5) and "not important at all" (coded 1) to "very important" (coded 5), respectively, their product ranges from 1 through 25 (see Appendix B).

Relationships with Families and Schools

Family Bonding. The closeness of the family relationship is measured by questions regarding family involvement (i.e., the amount of time spent with family) and attachment to family (i.e., perceived closeness to family and whether or not family members are interested in problems the respondent has). Based on these findings, items were first summed for a total score on each dimension (see Appendix B), and then the total scores were combined after standardization into a single composite measure.[27]

School Bonding. The study assesses closeness to one's school through items that measure involvement in homework (i.e., time spent on studying after school or on weekends), attachment to school or teachers (e.g., "I don't belong at school" or "teachers don't call on me"), and school performance (i.e., self-reported grade point average). An index of school bonding was constructed in the same way as that for family bonding.

Relationships with Friends and Attitudes Toward Drugs

Association with Drug-using Peers. Adolescents were asked how many of their close friends ranging from "none of them" (coded 1) to "all of them" (coded 5) have: (a) used marijuana; (b) used alcohol; (c) gotten drunk once in a while; and (d) used prescription drugs when there was no medical need for them. These four items that measure the proportion of a respondent's "close friends" who use drugs are used to create an index of association with drug-using peers by calculating the average of scores on the four items.

Pro-drug Attitudes. Each youth was asked to tell how wrong it is for him or her or someone of his or her age to use drugs by choosing one of the response categories ranging from "not wrong at all" (coded 4) to "very wrong" (coded 1). The average of the items' scores is calculated to construct an index of pro-drug attitudes.

Sociodemographic Variables

Based on prior research, we control for the influence of five important sociodemographic background variables that are related to adolescent drug use and its predictors.[28] The five variables include: sex (female coded 0, male coded 1); race (nonwhite coded 0, white coded 1); class (not underclass coded 0, underclass coded 1)[29]; intact family (not living with both biological parents

coded 0, living with both biological parents coded 1); and family size (the number of children under 18 in the respondent's family, ranging from 0 to 9 or more).

Analytic Strategy

By employing multilevel models[9] it is possible to account for both the neighborhood effects on drug use within-individuals as well as changes in drug use due to the effect of individual religious commitment, while controlling for the effects of mediating variables (i.e., family bonding, school bonding, characteristics of friends, and pro-drug attitudes). The analysis, therefore, takes a step-by-step approach whereby these mediating variables are added to five different multilevel models of neighborhood disorder which are briefly summarized below.

In the first model it is necessary to test whether neighborhood disorder has significant positive effects on adolescent use of illicit drugs apart from the influence of the mediating variables. Operating under the assumption that the effects of neighborhood disorder are significantly related to increased drug use, the second model tested whether the neighborhood effects were reduced by individual religious commitment. The third model tested whether the social bonding and social learning variables reduce the effects of perceived neighborhood disorder on adolescent use of illicit drug use. The fourth model enabled us not only to test whether the effects of religious commitment on illicit drug use increase with age, but also to determine whether the effects of perceived neighborhood disorder on adolescent use of illicit drugs remains significant after controlling for individual religious commitment and the social bonding and social learning variables simultaneously. Finally, model five examines whether individual religious commitment negatively interacts with or buffers the effects of perceived neighborhood disorder on adolescent use of illicit drugs throughout adolescence while controlling for all the mediating variables (for a more thorough explanation of the five models see Appendix C: Analytic Model).

Summary of Findings

1. Perceived neighborhood disorder increases teen use of illicit drugs

Results from estimating the five models of perceived neighborhood disorder, individual religious commitment, and adolescent use of illicit drugs are summarized in Appendix D: Table1. Of particular interest are the coefficients (located in the highlighted box) measuring the strength of causal linkages between variables in the model. As expected, results from Model 1 confirm that increases in perceived neighborhood disorder are linked to increases in both adolescent use of marijuana (.48) and hard drugs (.06). These coefficients are statistically significant and suggest that rundown neighborhoods are clearly linked to increases in illicit drug use, especially marijuana use.

2. Individual religious commitment reduces the effects of perceived neighborhood disorder on adolescent use of illicit drugs

As can be seen in Model 2, increasing individual religious commitment is significantly associated with decreasing use of illicit drugs. When individual religious commitment and age are

added into Model 2, the neighborhood effect on marijuana use remains significant but decreases by 27 percent, from .48 to .35, whereas the effects on hard-drug use reduce by 33 percent, from .06 to .04, becoming non-significant. This finding demonstrates that the effects of individual religious commitment on drug use are significant and real.

3. *Harmful neighborhood effects are reduced if a teen has a positive relationship with family and school, believes using illegal drugs is harmful or wrong, and forms friendships with peers who share similar characteristics and beliefs*

After replacing individual religious commitment in Model 3 with social bonding and school attachment variables, the neighborhood effect on marijuana use decreases by 31 percent, from .48 to .33, and the neighborhood effect on hard-drug use decreases by 17 percent, from .06 to .05. These results indicate that adolescents living in bad neighborhoods who are attached and committed to school and education are less likely to use illicit drugs than those who are not, whereas adolescents who have drug-using friends are more likely to use illicit drugs.[11] These findings provide additional evidence that the effect of bad neighborhoods on adolescent use of illicit drugs is partly influenced by social bonding and school attachment variables.

4. *The beneficial effect of individual religious commitment is independent of social and family bonding variables.*

As stated previously, individual religious commitment is significantly linked to declines in illicit drug use, and this important effect remains significant even after controlling for social bonding and school attachment variables. Specifically, the effects of religious commitment on marijuana use decrease by 71 percent from -.07 to -.02, whereas the effects on hard drugs reduce by 70 percent from -.01 to -.003 (see Model 4). Thus, a strongly religious teen's likelihood of using marijuana or hard drugs drops even when he or she otherwise has strong positive relationships with family and school, has non-drug using friends and possesses anti-drug attitudes.

In addition to documenting the statistical significance of religious commitment in reducing marijuana use in a multivariate model, we can also translate this reduction into a percentage decrease for adolescents living in neighborhoods of a fixed level of disorder (i.e., low, medium, or high) by degree of religious commitment (i.e., low, medium, or high). As can be seen in Appendix D: Table 2, for youth living in neighborhoods with low disorder (i.e., "good places") there is a 9 percent reduction in marijuana use when comparing youth from low to high levels of religious commitment. There is a 13 percent reduction in marijuana use for youth that are highly committed (versus youth that have low religious commitment) in neighborhoods of medium disorder. Finally, when compared with youth with low levels of religious commitment from neighborhoods of high disorder (or "bad places"), there is a 17 percent reduction in marijuana use for youth that are highly committed. A similar though less pronounced pattern can be seen for the use of hard drugs (see Appendix D: Table 3). When compared to youth with low levels of religious commitment, highly committed youth are less likely to use hard drugs in low, medium, and high disordered neighborhoods (2%, 4%, and 6% respectively). These findings confirm that the beneficial impact of religious commitment is indeed felt most profoundly in the most disorganized and rundown communities.

5. *The beneficial effect of individual religious commitment on teen drug use becomes stronger the older a teen gets.*

Some researchers hypothesize that even if religious commitment decreases drug use in preteens, these beliefs become less powerful as a youth grows up.[32] Our analysis reveals that this is not true: the total effects of religious commitment on marijuana use become stronger between early and later adolescence, peaking at the age of 18.6 (see Appendix E: Figure 1). The effects of religious commitment on hard-drug use also become stronger throughout the period of adolescence, although the effects remain relatively small until the adolescent reaches late adolescence. In sum, the effects of religious commitment on illicit drug use are found to be significant and generally become stronger as adolescents grow older.

6. *Religiously committed adolescents from bad neighborhoods, are less likely to use illicit drugs than those with low levels of religious commitment from good neighborhoods*

As mentioned earlier, religious adolescents from bad neighborhoods are less likely to use drugs than their counterparts in the same community who are not religiously committed.[33] This means individual adolescent religious commitment serves to weaken the harmful effects of neighborhood disorder by helping to prevent adolescence from using illicit drugs. Stated differently, individual religious commitment can be seen as countering the effects of neighborhood disorder, thereby shielding or protecting youths from illicit drug use. Further, the results presented in Tables 2 and 3 as well as graphically in Appendix E: Figure 2, demonstrate that the deterrent effect of individual religious commitment on illicit drug use tends to be greater for adolescents living in rundown neighborhoods than for those living in affluent neighborhoods. Indeed, we find that religiously committed adolescents from bad neighborhoods are 7 percent less likely to use marijuana and 2 percent less likely to use hard drugs than adolescents from good neighborhoods but with low religious commitment.

Conclusion

For over fifty years criminologists have theorized why one would expect that living in rundown neighborhoods would cause teens to engage in deviant behavior. Consistent with previous research[34] the present study finds that living in a neighborhood characterized by perceptions of disorder is a significant predictor of adolescent use of illicit drugs. It is not a quantum leap in logic to recognize that an adolescent living in a bad neighborhood is likely to believe that these visible signs of disorder symbolize a breakdown in neighborhood control. As neighborhoods tend to deteriorate, so can an adolescent's relations with pro-social institutions like the family and schools, while anti-social influences such as drug-using friends flourish.

The present findings provide empirical support for not only how a neighborhood environment exerts a deleterious influence on an adolescent's behavior, but also how the harmful environmental influence can be lessened by the individual's religious commitment and related protective networks of social relations. These important religious effects tend to decrease when social bonding and school attachment variables are controlled for, but remain statistically significant, confirming that religious commitment alone can reduce a teen's likelihood of using drugs.

There are several implications from this study that warrant consideration. First, since we know that the economic and social service benefits to be gained in communities through the efforts of religious communities can be substantial,[35] it would seem prudent to consider how innovative public/private ventures might be pursued that will assist and provide further resources to congregations, allowing them to play a vital role in bringing order and civility back into these communities. Investing in these communities may be one of the most cost-effective strategies in revitalizing America's most rundown neighborhoods.

Second, highly disordered neighborhoods should no longer be viewed simply as crime-ridden, drug-infested, and hopeless communities for urban dwellers. Any serious examination of most rundown neighborhoods in urban America will reveal that people and communities of faith are busily investing not only economic and social capital in these areas, but moral and spiritual capital as well, such as nurturing individual adolescent religious commitment — an investment we are only now beginning to recognize not only reduces illicit drug use, but protects adolescents from an array of illegal activities while increasing the likelihood of other pro-social or positive behavioral outcomes among disadvantaged youths.[36] Churches, synagogues, and mosques should no longer be overlooked for these laudable efforts, and should be supported as uniquely qualified agencies of social control that matter a great deal in the lives of adolescents in America's most disorganized and impoverished communities. Indeed, future efforts to reduce the use of illicit drugs in decaying communities will be needlessly short-sighted unless such strategies enlist the support of religious communities.

APPENDIX A:
STUDY DETAILS

The study uses data from the National Youth Survey (NYS), a longitudinal study of a national probability sample of 1,725 persons aged 11 to 17 in early 1977. After the seven birth cohorts in the sample and their parents were first interviewed in early 1977, adolescent respondents were re-interviewed in each of the subsequent five years. Each of the interviews is known as a "wave." The study analyzes the data from Waves 3-5, when items on individual religious commitment were included in the survey, and Wave 1 parent data only for the measures of neighborhood disorder, class, and family structure.

We further refined this data because we have to treat neighborhood disorder, which can change over time, as time-invariant because the NYS only contains data for it in the initial, 1977 interviews. Accordingly, the study confines our analysis to those adolescents who did not move during the five-year survey period, and assumes that the neighborhood environment remained the same as that described at the first-wave interview. While the NYS data do not include any direct measure of residential mobility, it did classify people's place-of-residence by a urban-suburban-rural classification.[37] Over the first five waves a total of 220 respondents moved between two of the levels of classification, leaving 1,505 respondents eligible for our analysis, 72% (n = 1,087) of which provided sufficient data for multilevel analysis. The sex (53% male and 47% female) and race (79% white and 21% nonwhite) distributions of the final sample remain the same as those of the original total sample at the first five waves.

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APPENDIX B:
VARIABLE OPERATIONALIZATION

Constructs, Dimensions, and Description of Items	Factor Loadings W1	W3	W4	W5	Reliability Coefficients (α) W1	W3	W4	W5
NEIGHBORHOOD DISORDER								
"I am going to read a list of problems that sometimes occur in neighborhoods. Please tell me whether you think each is a problem in this neighborhood, whether it's a Big Problem, Somewhat of a Problem, or Not a Problem at all." (1=not a problem; 2=somewhat of a problem; 3=big problem)								
(a) vandalism, buildings and personal belongings broken and torn up	.66				.78			
(b) winos and junkies	.64							
(c) traffic	.32							
(d) abandoned houses	.57							
(e) burglaries and thefts	.65							
(f) run down and poorly kept buildings and yards	.50							
(g) assaults and muggings	.68							
INDIVIDUAL RELIGIOUS COMMITMENT								
"During the past year, how often did you attend church, synagogue, other religious services?" (1=never; 2=several times a year; 3=once or twice a month; 4=once a week; 5=several times a week)								
"How important has religion been in your life?" (1=not important at all; 2=not too important; 3=somewhat important; 4=pretty important; 5=very important)								

Constructs, Dimensions, and Description of Items	Factor Loadings W1	W3	W4	W5	Reliability Coefficients (α) W1	W3	W4	W5
FAMILY BONDING								
Family Involvement								
"On the average, how many ___ during the school week have you spent talking, working, or playing with your family?" (0 through 5)								
(a) afternoons ... from the end of school or work to dinner	.73	.70	.74		.74	.73	.76	
(b) evenings ... from dinnertime to bedtime	.80	.82	.87					
"On the weekends, how much time have you generally spent talking, working, or playing with your family?" (1=very little; 2=not too much; 3=some; 4=quite a bit; 5=a great deal)	.59	.57	.57					

Constructs, Dimensions, and Description of Items	Factor Loadings W1 W3 W4 W5	Reliability Coefficients (α) W1 W3 W4 W5
FAMILY BONDING		
Family Attachment		
"How much do you agree or disagree with (that) ...?" (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)		
(a) I feel like an outsider with family	.74 .75 .79	.81 .83 .82 .84
(b) My family is willing to listen if I have a problem	.64 .75 .71	
(c) Sometimes I feel lonely when I'm with my family	.46 .52 .51	
(d) I feel close to my family	.80 .78 .74	
(e) My family doesn't take much interest in my problems	.78 .74 .72	

Constructs, Dimensions, and Description of Items	Factor Loadings W3 W4 W5	Reliability Coefficients (α) W3 W4 W5
SCHOOL BONDING		
Involvement in Homework		
"On the average, how many ___ during the school week have you spent studying?" (0 through 5)		
(a) afternoons ... from the end of school or work to dinner	.60 .65 .66	.69 .72 .74 .71
(b) evenings ... from dinnertime to bedtime	.69 .70 .74	
"On the weekends, how much time have you generally spent studying?" (1=very little; 2=not too much; 3=some; 4=quite a bit; 5=a great deal)	.66 .70 .70	
Attachment to School/Teachers		
"How much do you agree or disagree with (that) ...?" (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)		
(a) Teachers don't call on me in class, even when I raise my hand	.47 .51 .54	.66 .69 .68 .69
(b) I often feel like nobody at school cares about me	.62 .59 .60	
(c) Teachers don't ask me to work on special classroom projects	.40 .54 .49	
(d) I don't feel as if I really belong at school	.61 .64 .58	
(e) Even though there are lots of kids around, I often feel lonely at school	.55 .51 .50	

Constructs, Dimensions, and Description of Items	Factor Loadings W1 W3 W4 W5	Reliability Coefficients (α) W1 W3 W4 W5
SCHOOL BONDING		
School Performance		
"What is your grade point average?" (1=mostly F's; 2=mostly D's; 3=mostly C's; 4=mostly B's; 5=mostly A's)		
ASSOCIATION WITH DRUG-USING PEERS		
"During the last year how many of (your close friends) have ...?" (1=none of them; 2=very few of them; 3=some of them; 4=most of them; 5=all of them)		
(a) used marijuana or hashish	.76 .74 .71	.84 .84 .84
(b) used alcohol	.92 .92 .92	
(c) gotten drunk once in a while	.91 .92 .91	
(d) used prescription drugs such as amphetamines or barbiturates when there was no medical need for them	.42 .42 .44	
PRO-DRUG ATTITUDES		
"For this next set of questions, please tell me how wrong you think each of the following things is for you or someone your age." (1=not wrong at all; 2=a little bit wrong; 3=wrong; 4=very wrong)		
(a) use marijuana or hashish	.82 .80 .78	.86 .85 .85
(b) use alcohol	.88 .87 .89	
(c) get drunk once in a while	.88 .86 .87	
(d) use prescription drugs such as amphetamines or barbiturates when there is no medical need for them	.52 .50 .51	

APPENDIX C:
ANALYTIC MODEL

In the present study, multilevel models, specifically, Bryk and Raudenbush's (1992) hierarchical linear models (HLM) are used to examine the influence of neighborhood disorder and religious commitment on use of illicit drugs among adolescents. When multiple observations are made over time on a group of individuals for longitudinal research, such data can be viewed as having a multilevel data structure where the "higher" level (level 2) units are individuals and the "lower" level (level 1) units are occasions of measurement (waves in a panel design like the NYS). The multilevel modeling does not require the standard data structure in which the spacing and number of repeated observations are the same for each individual (Bryk and Raudenbush, 1992).

Let Y_{it} represent the measure of the dependent variable, illicit drug use, for individual i at time t. In our within-individual (i.e., level-1) model, the individual's illicit drug use measured at time t can be represented as a linear function of time-varying predictors measured at time t plus random error (r_{it}). First, to test whether neighborhood disorder has significant positive effects on adolescent use of illicit drugs before the hypothesized mediating variables are included in the model, we begin with a simple level-1 equation that includes only an intercept and *age* variables (i.e., linear and quadratic terms) as follows:

$$Y_{it} = \beta_{i0} + \beta_{i1} Age + \beta_{i2} Age^2 + r_{it} \quad (1)$$

where r_{it} is the residual for individual i at time t, and assumed to be normally distributed with homogeneous variance across individuals. One caveat is that the level-1 model is a random-intercept model where only the intercept (β_{i0} in Equation 1) is specified as a random coefficient because of the limited number of waves.

On the other hand, the level-2 model includes the key predictor of perceived neighborhood *disorder* and sociodemographic controls of *underclass*, *intact* family, number of *children*, sex (*male*), and race (*white*). In addition, given that the NYS data are from an "accelerated" longitudinal design in which cohort effects tend to confound with age effects, and recent studies providing evidence of significant age-cohort interactions (Jang 1999; Lauritsen 1998; Raudenbush and Chan 1992), it is necessary to control for such interaction effects. It was necessary, therefore, to construct six cohort dummy variables (cohorts 12 through 17 where the number refers to the age of a respondent at the time of the first interview) with the youngest cohort (cohort 11) as the reference category and added them to the level-2 model. Therefore, the following level-2 model is estimated for the random intercept (Equation 2a) and two fixed age effects (Equation 2b).

$$\beta_{i0} = \gamma_{00} + \gamma_{01} Disorder + \gamma_{02} Underclass + \gamma_{03} Intact + \gamma_{04} Children + \gamma_{05} Male + \gamma_{06} White + \gamma_{07} Cohort12 + \gamma_{08} Cohort13 + \gamma_{09} Cohort14 + \gamma_{010} Cohort15 + \gamma_{011} Cohort16 + \gamma_{012} Cohort17 + u_{i0} \quad (2a)$$

$$\beta_{ik} = \gamma_{k0} + \gamma_{k1} Cohort12 + \gamma_{k2} Cohort13 + \gamma_{k3} Cohort14 + \gamma_{k4} Cohort15 + \gamma_{k5} Cohort16 + \gamma_{k6} Cohort17 \quad (2b)$$

where k refers to the age variables ($k = 1, 2$). In Equations 2a and 2b, γ_{00} and γ_{k0} are the mean intercept and mean slope for the age variables, whereas u_{i0} and u_{ik} represent conditional residual or random variation of individuals around the mean intercept and slope, respectively.

Second, to see whether the neighborhood effects, if found significant, are mediated by individual religious commitment as hypothesized, we add individual *religious commitment* and two interaction terms involving age and religious commitment to the level-1 equation (Equation 1) as follows:

$$Y = \beta_0 + \beta_1 Age + \beta_2 Age^2 + \beta_3 Religious\ commitment + \beta_4 Age\ Religious\ commitment + \beta_5 Age^2\ Religious\ commitment + r \quad (3)$$

As a result of adding the three variables to the level-1 equation, the following equations are added to the level-2 model (Equations 2a and 2b).

$$\beta_3 = \gamma_{30} \quad (2c)$$
$$\beta_4 = \gamma_{40} \quad (2d)$$

where *l* and *m* refer to individual religious commitment ($l = 3$) and the interactions between age and religious commitment ($m = 4$ and 5), respectively. This second model (Equations 3 and 2a through 2d) is intended not only to examine the role which religious commitment plays in mediating the neighborhood effects but also to estimate the "total" effects of religious commitment on illicit drug use before controlling for the social bonding and social learning variables hypothesized to mediate the religious effects. In addition, we test whether the total effects of religious commitment increase with age.

Third, before we test whether the social bonding and social learning variables (i.e., *family* bonding, *school* bonding, association with drug-using *peers*, pro-drug *attitudes*) mediate the effects of religious commitment on illicit drug use, however, religious commitment and its interaction variables are replaced with the social bonding and social learning variables in our level-1 model as shown below. This third model is intended to test whether the social bonding and social learning variables mediate the effects of perceived neighborhood disorder on adolescent use of illicit drug use.

$$Y = \beta_0 + \beta_1 Age + \beta_2 Age^2 + \beta_6 Family + \beta_7 School + \beta_8 Peers + \beta_9 Attitudes + r \quad (4)$$

For this level-1 model, our level-2 model now includes a slightly changed Equation 2d, which we call now Equation 2d-1, as well as Equations 2a and 2b as shown below.

$$\beta_m = \gamma_{m0} \quad (2d\text{-}1)$$

where *m* now refers to the social bonding and social learning variables ($m = 6, 7, 8, 9$).

Fourth, religious commitment and its interactions are placed with age back into the level-1 equation to estimate the effects of religious commitment on illicit drug use independent of the mediating variables (i.e., the social bonding and social learning variables), and is called the "direct" effects of religious commitment, as follows:

$$Y = \beta_0 + \beta_1 Age + \beta_2 Age^2 + \beta_3 Religious\ commitment + \beta_4 Age\ Religious\ commitment + \beta_5 Age^2\ Religious\ commitment + \beta_6 Family + \beta_7 School + \beta_8 Peers + \beta_9 Attitudes + r \quad (5)$$

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In the corresponding level-2 model Equations 2a through 2c remain the same as above, while Equation 2d-1 now represents the interactions between individual religious commitment and age as well as the social bonding and social learning variables, being called Equation 2d-2, as shown below:

$$\beta_{m} = \gamma_{m0} \qquad (2d\text{-}2)$$

where *m* refers to level-1 predictors other than the age and religious commitment variables ($m = 4, \ldots, 9$). This fourth model enables us not only to test whether the direct effects of religious commitment on illicit drug use increase with age, but also to see whether the effects of perceived neighborhood disorder on adolescent use of illicit drugs remain significant after controlling for individual religious commitment and the social bonding and social learning variables simultaneously.

Finally, to test whether individual religious commitment negatively interacts with or buffers the effects of perceived neighborhood disorder on adolescent use of illicit drugs, the neighborhood disorder variable is included in the level-2 model, specifically, Equation 2c, which becomes Equation 2c-1, as shown below.

$$\beta_{1} = \gamma_{10} + \gamma_{11}\textbf{\textit{Disorder}} \qquad (2c\text{-}1)$$

where γ_{11} estimates the interaction between neighborhood disorder and religious commitment. In sum, combining the level-1 model (Equation 5) and the level-2 model (Equations 2a, 2b, 2c-1, and 2d-2) yields a full model which specifies that illicit drug use at time *t* is a linear function of: the overall intercept (γ_{000}); the main effects of perceived neighborhood disorder (γ_{011}), individual background characteristics ($\gamma_{020}, \ldots, \gamma_{012}$), age ($\gamma_{100}$ and γ_{200}), individual religious commitment (γ_{300}), and social bonding and social learning variables ($\gamma_{400}, \ldots, \gamma_{900}$ for the direct-effect model); two interaction terms involving the age and individual religious commitment (γ_{410} and γ_{510}); and the interactions involving not only the age and cohort variables ($\gamma_{111}, \ldots, \gamma_{116}$ and $\gamma_{211}, \ldots, \gamma_{216}$) but also individual religious commitment and perceived neighborhood disorder (γ_{311}) plus random error ($\boldsymbol{u}_{0} + \boldsymbol{r}$).

APPENDIX D:

TABLES 1-3

Table 1. Estimated Models of Neighborhood Disorder, Individual Religious Commitment (Religiosity), and Illicit Drug Use for Total Sample (n = 1,087)

	Marijuana Use					Hard Drug Use				
Fixed Effect	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept, $\gamma_{...}$	1.77 (1.56)	2.72* (1.56)	2.27 (1.49)	2.39 (1.49)	2.13 (1.49)	1.02* (.34)	1.14* (.34)	1.09* (.34)	1.10* (.34)	1.05* (.34)
Neighbor disorder, $\gamma_{...}$	.48* (.18)	.35* (.17)	.33* (.13)	.30* (.13)	.54* (.18)	.06* (.03)	.04 (.03)	.05* (.03)	.04* (.02)	.09* (.04)
Underclass, $\gamma_{...}$	.03 (.18)	.04 (.17)	.08 (.12)	.08 (.12)	.08 (.12)	.02 (.03)	.02 (.03)	.01 (.02)	.01 (.02)	.01 (.02)
Intact family, $\gamma_{...}$	-.53* (.14)	-.46* (.13)	-.33* (.10)	-.32* (.10)	-.32* (.10)	-.08* (.02)	-.07* (.02)	-.05* (.02)	-.05* (.02)	-.05* (.02)
Num. of children, $\gamma_{...}$	-.03 (.04)	-.02 (.04)	-.02 (.03)	-.02 (.03)	-.02 (.03)	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.00 (.00)	-.00 (.00)
Male, $\gamma_{...}$	.39* (.11)	.32* (.11)	.23* (.08)	.22* (.08)	.21* (.08)	.04* (.02)	.03* (.02)	.01 (.02)	.01 (.02)	.01 (.02)
White, $\gamma_{...}$	.29* (.15)	.23 (.15)	.19 (.11)	.18 (.11)	.18 (.11)	.08* (.02)	.08* (.02)	.03 (.02)	.04 (.02)	.04 (.02)
Cohort 12, $\gamma_{...}$	.22 (1.73)	-.35 (1.73)	-.36 (1.65)	-.30 (1.65)	-.35 (1.65)	-.06 (.38)	-.07 (.38)	-.07 (.37)	-.05 (.37)	-.06 (.37)
Cohort 13, $\gamma_{...}$	.37 (1.57)	-.43 (1.56)	-.41 (1.49)	-.54 (1.49)	-.51 (1.49)	-.04 (.34)	-.04 (.34)	-.04 (.34)	-.02 (.34)	-.02 (.34)
Cohort 14, $\gamma_{...}$	.26 (1.54)	-.26 (1.53)	-.48 (1.46)	-.59 (1.46)	-.56 (1.46)	-.01 (.34)	-.01 (.33)	-.03 (.33)	-.05 (.33)	-.05 (.33)
Cohort 15, $\gamma_{...}$	.59 (1.54)	-.52 (1.54)	-.48 (1.46)	-.58 (1.46)	-.55 (1.46)	-.05 (.34)	-.04 (.33)	-.04 (.33)	-.06 (.33)	-.05 (.33)
Cohort 16, $\gamma_{...}$	.39 (1.54)	-.36 (1.54)	-.07 (1.47)	-.19 (1.46)	-.16 (1.46)	-.00 (.34)	-.01 (.34)	-.03 (.33)	-.01 (.33)	-.01 (.33)
Cohort 17, $\gamma_{...}$	.41 (1.69)	-.50 (1.68)	-.04 (1.60)	-.14 (1.60)	-.09 (1.60)	-.06 (.37)	-.05 (.37)	-.09 (.36)	-.06 (.36)	-.07 (.36)
Age, $\gamma_{...}$	.06 (.80)	.11 (.80)	.26 (.77)	.32 (.77)	.30 (.77)	-.01 (.18)	-.01 (.18)	-.04 (.17)	-.03 (.17)	-.03 (.17)
Cohort 12, $\gamma_{...}$	.30 (1.00)	.38 (1.00)	.38 (.95)	.35 (.95)	.39 (.95)	.02 (.22)	.02 (.22)	.02 (.22)	.02 (.22)	.02 (.22)
Cohort 13, $\gamma_{...}$	.17 (.89)	.24 (.89)	.19 (.85)	.28 (.85)	.26 (.85)	.04 (.19)	.04 (.19)	.04 (.19)	.03 (.19)	.03 (.19)
Cohort 14, $\gamma_{...}$	.13 (.83)	.10 (.83)	.23 (.79)	.29 (.79)	.28 (.79)	.01 (.18)	.01 (.18)	.00 (.18)	.01 (.18)	.01 (.18)
Cohort 15, $\gamma_{...}$	.11 (.81)	.09 (.81)	.25 (.77)	.31 (.77)	.30 (.77)	.09 (.18)	.09 (.18)	.10 (.18)	.12 (.17)	.11 (.17)
Cohort 16, $\gamma_{...}$	.33 (.86)	.20 (.86)	.60 (.82)	.63 (.82)	.63 (.82)	.12 (.19)	.09 (.19)	.14 (.18)	.14 (.18)	.14 (.18)
Cohort 17, $\gamma_{...}$	.21 (1.09)	.18 (1.09)	.77 (1.04)	.81 (1.04)	.82 (1.04)	.10 (.24)	.10 (.24)	.14 (.24)	.16 (.24)	.16 (.24)
Age^2, $\gamma_{...}$	-.03 (.10)	-.06 (.10)	-.03 (.10)	-.06 (.10)	-.06 (.10)	-.01 (.02)	-.01 (.02)	-.01 (.02)	-.01 (.02)	-.01 (.02)
Cohort 12, $\gamma_{...}$	.06 (.14)	.07 (.14)	.08 (.14)	.08 (.14)	.08 (.14)	.00 (.03)	.00 (.03)	.00 (.03)	.00 (.03)	.00 (.03)
Cohort 13, $\gamma_{...}$	.03 (.14)	.05 (.14)	.00 (.14)	.02 (.14)	.02 (.14)	.02 (.03)	.01 (.03)	.02 (.03)	.02 (.03)	.02 (.03)
Cohort 14, $\gamma_{...}$	.08 (.15)	.08 (.15)	.04 (.14)	.05 (.14)	.05 (.14)	.02 (.03)	.02 (.03)	.03 (.03)	.02 (.03)	.02 (.03)
Cohort 15, $\gamma_{...}$	.07 (.15)	.05 (.15)	.06 (.15)	.04 (.15)	.04 (.15)	.01 (.03)	.01 (.03)	.01 (.03)	.01 (.03)	.01 (.03)
Cohort 16, $\gamma_{...}$	.12 (.17)	.06 (.17)	.12 (.16)	.09 (.16)	.10 (.16)	.02 (.04)	.02 (.04)	.02 (.04)	.02 (.04)	.02 (.04)
Cohort 17, $\gamma_{...}$	.05 (.20)	.04 (.20)	.10 (.19)	.08 (.19)	.08 (.19)	.01 (.04)	.01 (.04)	.01 (.04)	.01 (.04)	.01 (.04)

(table continues)

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	Marijuana Use					Hard Drug Use				
Fixed Effect	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Religiosity, γ_{10}		-.07* (.01)		-.02* (.01)	-.01 (.02)		-.01* (.00)		-.00* (.00)	-.00 (.00)
Neighbor disorder, γ_{20}					-.02* (.01)					-.00* (.00)
Age x Religiosity γ_{11}		-.01* (.00)		.00 (.00)	.00 (.00)		-.00* (.00)		-.00* (.00)	-.00* (.00)
Age^2 x Religiosity, γ_{12}		.00* (.00)		.00* (.00)	.00* (.00)		-.00 (.00)		-.00 (.00)	-.00 (.00)
Family bonding, γ_{30}			-.04* (.02)	-.03* (.02)	-.03* (.02)			.00 (.00)	.00 (.00)	.00 (.00)
School bonding, γ_{40}			-.05* (.02)	-.05* (.02)	-.04* (.02)			-.02* (.00)	-.02* (.00)	-.02* (.00)
Drug-using peers, γ_{50}			.68* (.04)	.66* (.04)	.66* (.04)			.07* (.01)	.06* (.01)	.06* (.01)
Pro-drug attitude, γ_{60}			.76* (.05)	.73* (.06)	.73* (.06)			.08* (.01)	.08* (.01)	.08* (.01)
Random Effect										
Intercept, u_{0j}										
Variance component	2.90	2.60	1.28	1.27	1.27	.07	.07	.05	.05	.05
df	1074	1074	1074	1074	1074	1074	1074	1074	1074	1074
χ^2	8111.19	7395.15	4455.35	4465.10	4448.04	4684.21	4498.93	3730.72	3736.11	3720.94
p-value	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Level-1 effect, r_{ij}										
Variance component	1.33	1.32	1.21	1.21	1.21	.06	.06	.06	.06	.06

Note: Standard errors of coefficients are presented in parentheses.

* $p < .05$ (one-tailed test)

Table 2. Percent Change in Marijuana Use Comparing Adolescents with Low, Medium, and High Levels of Religious Commitment from Neighborhoods of Low, Medium, and High Disorder

		Religious Commitment			*% Change*		*%Change*
Disorder	Low	Medium	High	Lo to Med Religious Commit	Med. to Hi Religious Commit	Lo v Hi Religious Commit	Lo Disorder & Lo Religious Commit v. Hi Disorder & Hi Religious Commit
Low	2.363417	2.254058	2.144699	-4.62716	-4.85165	-9.25431	
Medium	2.507753	2.341582	2.175411	-6.62629	-7.09653	-13.2526	
High	2.652088	2.429106	2.206123	-8.40779	-9.17963	-16.8156	
							-6.6553*
		Disorder			*% Change*		
Religious Commitment	Low	Medium	High	Lo v. Med	Med. v. Hi	Lo v. Hi	
Low	2.363417	2.507753	2.652088	6.10709	5.755551	12.21414	
Medium	2.254058	2.341582	2.429106	3.882952	3.737815	7.765905	
High	2.144699	2.175411	2.206123	1.431996	1.411779	2.863992	

* This percent reduction is computed from the coefficients in the Low Low and the High High Cells.

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Table 3. Percent Change in Hard Drug Use Comparing Adolescents with Low, Medium, and High Levels of Religious Commitment from Neighborhoods of Low, Medium, and High Disorder

		Religious Commitment			***% Change***		*%Change*
Disorder	Low	Medium	High	Lo to Med Religious Commit	Med. to Hi Religious Commit	Lo v Hi Religious Commit	Lo Disorder & Lo Religious Commit v. Hi Disorder & Hi Religious Commit
Low	1.08876	1.07741	1.06606	-1.04249	-1.05348	-2.08499	
Medium	1.112134	1.089924	1.067715	-1.99703	-2.03772	-3.99406	
High	1.135508	1.102439	1.069369	-2.91227	-2.99963	-5.82454	
							-1.78102*
		Disorder			***% Change***		
Religious Commitment	Low	Medium	High	Lo v. Med	Med. v. Hi	Lo v. Hi	
Low	1.08876	1.112134	1.135508	2.14681	2.101691	4.293621	
Medium	1.07741	1.089924	1.102439	1.16151	1.148174	2.323021	
High	1.06606	1.067715	1.069369	0.155229	0.154988	0.310457	

*This percent reduction is computed from the coefficients in the Low/Low and the High/High Cells.

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Figure 1. Total and Direct Effects of Individual Religious Commitment on Adolescent Use of Marijuana and Hard Drugs

APPENDIX E
FIGURES 1-2

NOTE: Solid lines represent total effects; dotted lines represent direct effects.

Figure 2. The Effect of Individual Religious Commitment on Marijuana and Hard Drug Use at Low, Medium, and High Levels of Neighborhood Disorder (top) and the Effect of Neighborhood Disorder on Marijuana and Hard Drug Use at Low, Medium, and High Levels of Individual Religious Commitment (bottom)

NOTE: Low, medium, and high levels of neighborhood disorder and individual religious commitment are estimated at one standard deviation below the mean, the mean, and one standard deviation above the mean, respectively. All the other variables are held constant at their means.

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Endnotes

[1] Department of Health and Human Services, 1999, Annual national drug results released: Youth drug use decreases, overall rates remain level; Lloyd D. Johnston et al., 1997, "Monitoring the future study." Press Release, December 20.

[2] See for example, Richard Dembo et al., 1986, "Perceived environmental drug use risk and the correlates of early drug use among inner-city youth: The motivated actor." *International Journal of the Addictions*; David J. Hawkins et al., 1988, "Delinquency and drug abuse: Implications for social services." *Social Service Review* 258-284.; and Denise B. Kandel, 1980, "Drug and drinking behavior among youth." *Annual Review of Sociology* 6:235-285).

[3] James Q. Wilson and George L. Kelling, 1982, "Broken Windows." *The Atlantic Monthly* 249:29-38.

[4] Wesley G. Skogan, 1990, Disorder and Decline: Crime and the Spiral of Decay in American Neighborhoods. New York: The Free Press.

[5] Ralph B. Taylor, 1999a:68) "The incivilities thesis: Theory, measurement, policy." In R. Langworthy (ed.), *Measuring What Matters: Proceedings from the Policing Research Institute Meetings*. Washington, DC: U.S. Department of Justice.

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[7] Wesley G. Skogan, 1990, Disorder and Decline: Crime and the Spiral of Decay in American Neighborhoods. New York: The Free Press.

[8] Ralph B. Taylor, 1999b, "Crime, grime, fear, and decline: A longitudinal look. Washington, DC: U.S. Department of Justice.

[9] Robert J. Sampson and Stephen W. Raudenbush (1999), "Systematic social observation of public spaces: A new look at disorder in urban neighborhoods." *American Journal of Sociology* 105:603-651. This research, however, has been criticized. Reanalyzing Skogan's data with a different definition of neighborhood disorder, Harcourt (1998:329, *emphasis* in original) concludes that "there are *no* statistically significant relationships between disorder and purse-snatching, physical assault, burglary, or rape when [neighborhood structure] variables [i.e., poverty, stability, and race] are held constant, and that the relationship between robbery and disorder also disappears when the five Newark neighborhoods are set aside." Taylor (1999a) and Sampson and Raudenbush (1999) also report that the significant effects of disorder on crime either disappear when neighborhood structure is controlled for or are not observed consistently across different types of crime.

[10] (Dembo et al., 1986, Ibid; Skogan, 1990, Ibid).

[11] J. David Hawkins et al., 1988, Ibid.

[12] (Hawkins et al., 1988, Ibid; Kandel, 1980, Ibid; Terrence P. Thornberry and Marvin D. Krohn, 1997, "Peers, Drug Use, and Delinquency." In D. M. Stoff et al., (ed.) Handbook of Antisocial Behavior. New York: Wiley

[13] Marvin D. Krohn and Terrence P. Thornberry, 1993, "Network theory: A model for understanding drug abuse among African-American and Hispanic Youth." In M.R. De La Rosa and J. R. Adrados (ed.), *Drug Abuse Among Minority Youth: Advances in Research and Methodology*. NIDA Research Monograph 130, U.S. Department of Health and Human Services.

[14] Hawkins et al., 1988, Ibid; Byron R. Johnson et al., 2000a, "Escaping from the Crime of Inner Cities: Church Attendance and Religious Salience Among Disadvantaged Youth." *Justice Quarterly* 17:377-391.

[15] Johnson et al., 2000a, Ibid.

[16] Byron R. Johnson et al., 2000b, "The 'Invisible Institution' and Urban Crime: The African-American Church as an Agency of Local Social Control." *Journal of Youth and Adolescence* 29: 479-498.

[17] Krohn and Thornberry, 1993, Ibid.

[18] Walter Reckless et al., 1956, "Self-concept as an insulator against delinquency." *American Sociological Review* 21:744-756.

[19] See for example, Stan L. Albrecht et al., 1977, "Religiosity and deviance: Application of an attitude-behavior contingent consistency model." *Journal for the Scientific Study of Religion* 16:263-274; Steven Burkett and Mervin White, 1974, "Hellfire and delinquency: Another look." *Journal for the Scientific Study of Religion* 13:455-462; Travis Hirschi and Rodney Stark, 1969, "Hellfire and delinquency." *Social Problems* 17:202-213.

[20] The present study is based on a larger study by Sung Joon Jang and Byron R. Johnson, 2001, "Neighborhood Disorder, Individual Religiosity, and Adolescent Use of Illicit Drugs: A Test of Multilevel Hypotheses." Forthcoming publication.

[21] Delbert S. Elliott et al., 1989, Multiple Problem Youth: Delinquency, Substance Use and Mental Health Problems. New York: Springer-Verlag.

[22] Despite this data loss the gender (53% male and 47% female) and race (79% white and 21% nonwhite) distributions of the final sample remain the same as those of the original total sample at the first five waves.

[23] The NYS asked adolescent respondents to report their perceived neighborhood disorder at Wave 5 and their parents to report perceived neighborhood disorder at Wave 1. We decided to use the Wave-1 parent data to address the issue of causal ordering (i.e., explaining drug use at Waves 3-5 with neighborhood disorder measured at Wave 1 rather than at Wave 5). Another reason we decided to use parental perceptions rather than adolescents' perceptions is because the latter might be biased if they are influenced by earlier drug use. For example, antisocial adolescents might perceive neighborhood conditions of disorder to be less problematic and threatening than their prosocial counterparts living in the same neighborhood because the former take advantage of such disordered conditions more than the latter. In fact, our preliminary analyses showed that parents' perceptions of neighborhood disorder are more likely than adolescents' perceptions to have significant effects on the adolescent use of illicit drugs. To examine the convergent validity of parent and adolescent self-reports, we also calculated a correlation between the two ($® = .27$, $p < .05$) which indicates a relatively low concordance between the two reports. While this suggests that a parent and his or her adolescent child often do not have the same perceptions about their neighborhood, given our limited data we have no way to assess the relative validity of the two measures. If we had data on disorder based on trained raters' onsite assessments of neighborhood conditions, for example, *and* both parent and adolescent data collected at the same time, we could have evaluated the concurrent validity of the two self-reports using the onsite assessments as reference point. Lacking evidence on the relative validity of the two measures, the effects of perceived neighborhood disorder should be interpreted with caution. However, given that the perceptual measure of neighborhood disorder based on parental reports tends to have more construct validity (i.e., more likely to have significant effects on illicit drug use) than the one based on adolescent reports, we believe that our decision to use the former is appropriate.

[24] Brent B. Benda and Robert Flynn Corwyn, 1997, "Religion and delinquency: The relationship after considering family and peer influences." *Journal for the Scientific Study of Religion* 36:81-92.

[25] T. David Evans et al., 1995, "Religion and crime reexamined: the impact of religion, secular controls, and social ecology on adult criminality." *Criminology* 33:195-224; Charles Tittle and Michael Welch, 1983, "Religiosity and deviance: Toward a contingency theory of constraining effects." *Social Forces* 61:653-682

[26] This measure is consistently more highly correlated with drug use than a measure without the multiplication. An alternative measure of individual religious commitment was also constructed by combining the service-attendance item with items about participating in "religious/church groups" in the community after multiplying them by the respondent's perceived importance of such participation. However, this alternative measure was not as strongly related to drug use as that employed in this study. Further analysis indicated that only small percentages of the total respondents participated in "religious/church groups" in the community (13%, 13%, 11% at Waves 3, 4, 5, respectively), and even smaller proportions reported that they frequently do so.

[27] For this standardization procedure, we used means and standard deviations of dimension measures for cohort 11 (i.e., those who were eleven years old at the initial wave of interview) at wave 3 given the importance of comparing unstandardized regression coefficients across ages.

[28] (Dembo et al., 1986, Ibid; J. David Hawkins et al., 1988, Ibid; Denise B. Kandel, 1980, Ibid; Marvin Krohn and Terrence Thornberry, 1993, Ibid; Terrence Thornberry, 1987, "Towards an interactional theory of delinquency." *Criminology* 25:863-892.

[29] A respondent is coded as coming from an underclass family if his or her family's primary wage earner was unemployed *and* his or her family received public assistance during the previous year of the first-wave interview.

[30] Anthony S. Bryk and Stephen W. Raudenbush (1991). Hierarchical Linear Models: Applications and Data Analysis Methods. Newbury Parks, CA: Sage Publications.

[31] For similar findings see Hawkins et al., 1988, Ibid; Kandel, 1980, Ibid; Terrence Thornberry and Marvin Krohn, 1997, Ibid.

[32] See for example, Stan L. Albrecht et al., 1977, "Religiosity and deviance: Application of an attitude-behavior contingent consistency model." *Journal for the Scientific Study of Religion* 16:263-274; Steven Burkett and Mervin White, 1974, "Hellfire and delinquency: another look." *Journal for the Scientific Study of Religion* 13:455-462; Travis Hirschi and Rodney Stark, 1969, "Hellfire and delinquency." *Social Problems* 17:202-213.

[33] Specifically, the coefficient of the interaction term (g_{11}) is significant for both marijuana (-.02) and hard-drug (-.005) use (see Model 5).

[34] See for example, Robert Bursik and Harold Grasmick, 1993, Neighborhoods and Crime: The Dimensions of Effective Community Control. New York: Lexington Books; Robert J. Sampson and W. Byron Groves, 1989, "Community structure and crime: Testing social-disorganization theory." *American Journal of Sociology* 94:774-802; and Skogan, 1990.

[35] See Ram Cnaan, 2000. Keeping Faith in the City: How 401 Urban Religious Congregations Serve Their Neediest Neighbors. Center for Research on Religion and Urban Civil Society: Philadelphia, PA.

[36] See Johnson et al., 2000a, Ibid; Byron R. Johnson et al., 2000b, Ibid.

[37] The correction for residential mobility is limited in that (1) respondents whose urban-suburban-rural classification did not change might still have moved to a neighborhood with different levels of disorder, (2) respondents did not move but their neighborhood changed, and/or (3) those who were excluded from the present analysis might have moved to a place that did not change in terms of disorder. It should be noted, however, that measurement error due to our inability to detect "false negatives" (i.e., those classified as "non-movers" but actually moved during the research period) and neighborhood changes makes it more difficult to observe significant effects of neighborhood disorder on illicit drug use.

C R R U C S

CRRUCS, the Center for Research on Religion and Urban Civil Society, is part of the School of Arts and Sciences at the University of Pennsylvania. Founded in 2000, CRRUCS is dedicated to producing and disseminating cutting-edge empirical knowledge about the role of religion in contemporary urban America. With an interdisciplinary team of over a dozen Penn-based colleagues, and in close working partnerships with other major universities, think tanks, research intermediaries, and news organizations, CRRUCS focuses on how national and local faith-based organizations help to solve big-city social problems; how religion relates to contemporary urban political participation, civic engagement, and social well-being; and how local congregations, grassroots ministries, and other communities of faith matter in the daily lives of disadvantaged urban children, youth, and families.

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